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# SCIENCE

FRIDAY, MAY 17, 1912

## THE PRESENT STATUS OF THE GENETICS PROBLEM<sup>1</sup>

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THE problem of heredity has been at-  
tacked in four principal ways. Galton  
developed to a high degree what we may  
call the statistical method. His most im-  
portant conclusions are embodied in his law  
of ancestral inheritance and his law of  
regression. According to the former, the  
two parents together contribute one half of  
the total inheritance of an individual, the  
four grandparents one fourth, the eight  
great-grandparents one eighth, and so on  
indefinitely. The law of regression at-  
tempts to state the average deviation of a  
fraternity from the mean of the general  
population in terms of the average devia-  
tion of the two parents. Recent investiga-  
tions have shown that neither of these laws  
is true except for averages of large num-  
bers of cases, and not in all cases even then.  
They are not applicable to individual cases,  
and are hence of no importance in the mod-  
ern science of genetics, however important  
they may be in statistical problems in gen-  
eral.

In recent years the methods used by  
Galton have been developed by Pearson  
and others into a highly mathematical  
treatment of the subject of heredity, which  
has given us important means of dealing  
with the precision and reliability of data  
and enabled us to study certain types of  
correlation to advantage, but which has  
otherwise had comparatively little influence  
on the progress of genetics. The study of  
correlation between hereditary characters  
by statistical methods has not as yet led to

<sup>1</sup> Presidential address before the Washington  
Botanical Society, March 5, 1912.

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